

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (previously presented) A method for integrating steering and motion control in a vessel comprising the steps of:

 mounting first and second rudder bodies to a vessel, wherein said first rudder body is located on a first side of a centerline of said vessel and said second rudder body is located on a second side, opposite said first side, of said centerline and said centerline is parallel with a keel of said vessel;

 mounting at least one first rudder member to said first rudder body and at least one second rudder member to said second rudder body; and,

 rotating said first and second rudder bodies around respective first axis and said at least one first and second rudder members around respective second axis using at least one rotating means, wherein said rotation of said first and second rudder bodies and said at least one first and second rudder members steers said vessel and controls motion of said vessel.

2. (previously presented) The method recited in Claim 1 wherein said respective first axis is substantially parallel to said keel.

3. (previously presented) The method recited in Claim 1 wherein said respective second axis is substantially perpendicular to said respective first axis.

4. (previously presented) A rudder comprising:
 a rudder body;
 at least one rudder member mounted to said first rudder body; and,

at least one rotating means arranged to rotate said rudder body around a first axis and said at least one rudder member around a second axis, wherein said rudder body and said at least one rudder member are arranged to rotate independently of each other.

5. (cancelled)

6. (previously presented) The rudder recited in Claim 4, wherein said second axis is substantially perpendicular to said first axis.

7. (previously presented) The rudder recited in Claim 4 wherein said at least one rotating means further comprises a linear actuator.

8. (previously presented) The rudder recited in Claim 4 wherein said at least one rotating means further comprises a rotary actuator.

9. (previously presented) The rudder recited in Claim 4 wherein said at least one rotating means further comprises an electrical motor.

10. (previously presented) The rudder recited in Claim 4 wherein said at least one rotating means further comprises a stepper motor.

11. (previously presented) An apparatus for steering and controlling motion in a vessel comprising:

a first rudder body and at least one first rudder member mounted to said first rudder body;
a second rudder body and at least one second rudder member mounted to said second rudder body;

at least one rotating means arranged to rotate said first and second rudder bodies around respective first axis and said at least one first and second rudder members around respective second axis; and,

wherein said first and second rudder bodies are arranged to rotate independently of each other and said rotation of said first and second rudder bodies and said at least one first and second rudder members steers said vessel and controls motion of said vessel.

12. (previously presented) The apparatus recited in Claim 11, wherein said vessel further comprises a first keel and said respective first axis is substantially parallel to said first keel.

13. (previously presented) The apparatus recited in Claim 11, wherein said respective second axis is substantially perpendicular to said respective first axis.

14. (previously presented) The apparatus recited in Claim 11 wherein said at least one rotating means further comprises a linear actuator.

15. (previously presented) The apparatus recited in Claim 11 wherein said at least one rotating means further comprises a rotary actuator.

16. (previously presented) The apparatus recited in Claim 11 wherein said at least one rotating means further comprises an electrical motor.

17. (previously presented) The apparatus recited in Claim 11 wherein said at least one rotating means further comprises a stepper motor.

18. (previously presented) A vessel comprising:
a hull;

first and second rudder bodies mounted to said hull, wherein said first rudder body is located on a first side of a centerline of said vessel and said second rudder body is located on a second side, opposite said first side, of said centerline and said centerline is parallel with a keel of said vessel;

at least one first rudder member mounted to said first rudder body and at least one second rudder member mounted to said second rudder body;

at least one rotating means arranged to rotate said first and second rudder bodies around respective first axis and said at least one first and second rudder member around respective second axis; and,

wherein said rotation of said first and second rudder bodies and said at least one first and second rudder members steers said vessel and controls motion of said vessel.

19. (currently amended) The vessel recited in Claim 44 wherein said first and second appendages are each ~~[[is]]~~ a crossfoil.

20. (previously presented) The method recited in Claim 1 wherein controlling motion of said vessel further comprises controlling roll and pitch motion of said vessel.

21. (previously presented) The method recited in Claim 1 wherein said vessel further comprises an automatic control system; and,
wherein rotating said first and second rudder bodies and said at least one first and second rudder members are responsive to said automatic control system.

22. (previously presented) The method recited in Claim 1 further comprising:
rotating said first and second rudder bodies independently of each another;
rotating said at least one first rudder member and said first rudder body independently of each other;
rotating said at least one second rudder member and said second rudder body

independently of each other; and,

rotating said at least one first and second rudder members independently of each other.

23. (previously presented) The method recited in Claim 22 further comprising:
rotating said first and second rudder bodies in opposite directions.

24. (previously presented) The method recited in Claim 1 wherein said at least
one rotating means further comprises a linear actuator.

25. (previously presented) The method recited in Claim 1 wherein said at least
one rotating means further comprises a rotary actuator.

26. (previously presented) The method recited in Claim 1 wherein said at least
one rotating means further comprises an electrical motor.

27. (previously presented) The method recited in Claim 1 wherein said at least
one rotating means further comprises a stepper motor.

28. (previously presented) The rudder recited in Claim 4 wherein said at least
one rotating means further comprises a first rotating means arranged to rotate said rudder body
and a second rotating means arranged to rotate said at least one rudder member.

29. (previously presented) The apparatus recited in Claim 11 wherein said
vessel comprises a second keel and a centerline essentially parallel with said second keel; and,
wherein said first rudder body is disposed on a first side of said centerline and said second rudder
body is disposed on a second side, opposite said first side, of said centerline.

30. (previously presented) The apparatus recited in Claim 11 wherein said first and second rudder bodies and said at least one first and second rudder members are arranged to be rotated to control roll and pitch motion of said vessel.

31. (previously presented) The apparatus recited in Claim 11 wherein said first rudder body and said at least one first rudder member are arranged to be rotated independently of each other, said second rudder body and said at least one second rudder member are arranged to be rotated independently of each other, and said at least one first and second rudder members are arranged to be rotated independently of each other.

32. (previously presented) The apparatus recited in Claim 31 wherein said first and second rudder bodies are arranged to rotate in opposite directions.

33. (previously presented) The apparatus recited in Claim 11 wherein said vessel further comprises an automatic control system; and, wherein said at least one rotating means is responsive to said automatic control system.

34. (previously presented) The vessel recited in Claim 18, wherein said vessel further comprises a keel and said respective first axis is substantially parallel to said keel.

35. (previously presented) The vessel recited in Claim 18, wherein said respective second axis is substantially perpendicular to said respective first axis.

36. (previously presented) The vessel recited in Claim 18 wherein said first and second rudder bodies and said at least one first and second rudder members are arranged to be rotated to control roll and pitch motion of said vessel.

37. (previously presented) The vessel recited in Claim 18 wherein said first and second rudder bodies are arranged to be rotated independently of each other.

38. (previously presented) The apparatus recited in Claim 37 wherein said first rudder body and said at least one first rudder member are arranged to be rotated independently of each other, said second rudder body and said at least one second rudder member are arranged to be rotated independently of each other, and said at least one first and second rudder members are arranged to be rotated independently of each other.

39. (previously presented) The apparatus recited in Claim 37 wherein said first and second rudder bodies are arranged to rotate in opposite directions.

40. (previously presented) The vessel recited in Claim 18, wherein said at least one rotating means further comprises a linear actuator.

41. (previously presented) The vessel recited in Claim 18, wherein said at least one rotating means further comprises a rotary actuator.

42. (previously presented) The vessel recited in Claim 18, wherein said at least one rotating means further comprises an electrical motor.

43. (previously presented) The vessel recited in Claim 18, wherein said at least one rotating means further comprises a stepper motor.

44. (previously presented) The vessel recited in Claim 18 further comprising first and second appendages fixed to said hull; and,
wherein said first rudder body is mounted to said first appendage and said second rudder body is mounted to said second appendage.

45. (previously presented) The vessel recited in Claim 18 wherein said vessel further comprises an automatic control system; and, wherein said at least one first and second rotating means are responsive to said automatic control system.